Objective: The goal of the thesis "Monitoring of the Respiratory Functions in patients after the Rib Cage Surgery according to Nuss" was to confront the present knowledge about respiratory functions and the strength of respiratory muscles of patients with inherited pectoral deformity pectus excavatum, to compare it with my own measuring and to find out about their development after the surgical correction according to Nuss.

Methodology: There were 15 patients being monitored (13 men and 3 women), who underwent spirometric and bodypletysmographic examination and the occlusal mouth pressures were determined before the surgery. The same pulmonary function tests were run in the course of 4 to 10 months (7.1 months on average) on all the patients, the control determination of mouth pressures is available for 13 of them.

Results: In the entry tests, compared to adequate values the patients in this file had increased residual lung capacities (RV 142%, p=0.001; ITGV 116.2%, p=0.004; RV%TLC 133.8%, p=0.002; ITGV% 116.1%, p=0.001) at the expense of statistically lower vital lung capacity (VC 81.9%, p=0.0004) and inspiratory reserve capacity (IC 84.2%, p=0.0003), while the total lung capacity remained unaltered (TLC 99.7%, p=0.877). The obstructive parameters of these patients were significantly altered (FEV1 95.7%, p=0.534; PEF 92.1, p=0.20). The strength of respiratory muscles was considerably reduced, both of the inspiratory (PImax 72.8%, p=0.011) and especially the expiratory ones (PEmax 57.2%, p=0.00004). When monitoring the relation between individual capacity parameters and the Haller's index, a statistically significant deviation has been found; the obstructive parameters showed negative correlation FEV1 (coefficient of correlation -0.53, p=0.044) and PEF (coefficient of correlation -0.55, p=0.033). The strength of respiratory muscles does not show a statistically significant correlation with the seriousness of the pectoral deformity in the monitored file. After the surgery a statistically significant reduction of the vital and inspiratory capacity of lungs occured (VC -8%, p= 0.001;IC -14%, p=0.003); the residual lung capacities which were already increased before the surgery, have not changed.

Conclusions: In the monitored file the entry values of lung capacities of patients with pectus excavatum were indicative of the static lung hyperinflation. The hyperinflation has not altered after the surgery according to Nuss. The vital capacity and reserve inspiratory capacity was decrease after Nusse procedur. The strength of inspiratory and expiratory muscles has been significantly reduced. The strength of respiratory muscles was not influenced by the surgery. The entry values FEV1 and PEF show statistically significant correlation with the Haller´s index.